Research Paper

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Prevalence of Hypertension and Their Risk Factors Among Faculty Members of Teaching Institutes of Ahmedabad City: the Hidden Burden

Medical Science

KEYWORDS : Risk factors, Hypertension, Teaching institute, Burden

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ABSTRACT

In the eyes' of their students, the school teachers are role models who "practice what they preach". And well observed habits of teachers at the school are usually adapted by them on long term. In India, hypertension is the leading NCD risk and estimated to be attributable for nearly 10 per cent of all deaths. So, this study is carried out to know prevalence of hypertension and its risk factors among teachers. A total 576 teachers of Ahmedabad city were interviewed and examined using pre-tested questionnaire. 5.21% males in studied group were currently smoking while 12.15% males were consuming smokeless tobacco. Alcohol consumption was reported 15.90%. Overweight and obesity were more common among male faculty members. Hidden burden of hypertension among faculty members was around 11.45% among male and 10.76% among female. The findings of study suggest that the remarkable prevalence of risk factors of hypertension among faculty members calls for a sound public-health approach.

INTRODUCTION:

In modern world, the major cause of death and disability are found to be shifted from nutritional deficiencies and infectious disease to non-infectious chronic disease. This shift is called "the epidemiological transition". [1] These non-communicable diseases are projected to increase from 29% in 1990 to over 57% in 2020. [2]

In the eyes' of their students, the school teachers are role models who "practice what they preach". The teachers' dietary practices, physical activity and habits (tobacco and alcohol consumption) at the school are usually well observed by students. On the long term, the same may be adapted by them. So, the purpose of this study is to know prevalence of hypertension (self reported and hidden cases) and calculate risk factors among teachers, and if the teachers are well aware regarding the risk factors of hypertension, they can transfer this knowledge to their students.

AIMS AND OBJECTIVE:

1. To determine the physical health profile of faculty members of teaching institutes in Ahmedabad city.
2. To find out prevalence of hypertension (self reported and hidden cases) among faculty members.
3. To find out prevalence of different risk factors among faculty members.

MATERIAL AND METHOD:

Sample size:

In the pilot study, the prevalence of any of risk factors for hypertension was found out to be approximately 41%. Considering this prevalence for risk factors sample size was calculated and allowable error was taken as 10%. Calculated sample size value came out to be 576. **Study Period**: July 2012 to August 2013. **Study Design:** Cross-sectional study. **Study Area:** The study was carried out in schools/ colleges of Ahmadabad city. **Study Population:** Total 288 male and 288 female faculty members from schools /colleges of Ahmedabad were included in the study. **Data Collection:** List of schools and colleges of Ahmadabad was procured from Ahmadabad District Office and internet. Ahmadabad Municipal Corporation is divided into Six Zones. 96 faculty members including, 48 males and 48 females were taken as a study population from each zone thus sample of 576 faculty members were taken. Schools/colleges from each zone were selected by 'Random Sampling method' using the 'Random number table'. All the available teaching staff of the selected schools/ colleges was taken as study population and next randomly selected school/college was taken in each zone to complete sample size. A pre-designed and pre-tested Performa was used for collection of data. **Data analysis:** Data was entered in master chart and then analyzed by Microsoft Excel and Epi info7.0

RESULT:

Table 1: Age and sex distribution

Tables 1 show that majority of participants (42.54%) were from 45-54 years of age group followed by 35-44 years (29.16%) of age groups. Mean age of male and female were 45.47 years and 42.76 years respectively.

Age-group (in years)	Sex				Total	
	Male		Female			
	No.	%	No.	%	No.	%
25-34	34	5.90	62	10.76	96	16.66
35-44	90	15.62	78	13.54	168	29.16
45-54	127	22.04	118	20.48	245	42.54
55-64	37	6.24	30	5.20	67	11.64
Total	288	50	288	50	576	100

Table 2: Details of tobacco and alcohol consumption – (Male)

Sr. No	Tobacco consumption		No.	%
1	Smoking		15/288	5.21
	Current	Daily	11/15	73.33
		Occasionally	4/15	26.67
		Total	15	100
2	Past smokers		27/288	9.37
3	H/o exposure to passive smoking		58/288	20.13
4	Smokeless tobacco		35/288	12.15
	Current	Daily	33/35	94.29
	Occasionally	2/35	5.71	
	Total	35	100	
5	Past smokeless tobacco users		8/288	2.78
6	Alcohol consumption		17/288	5.90
	Current	Daily	1/17	5.88
	Occasionally	16/17	94.11	
	Total	17	100	
7	Past alcohol consumer		7/288	2.43

Table 2 shows, 15(5.21%) males in studied group were currently smoking. Out of which 11 (73.33%) were smoking daily. Exposures to smoking at home or working place were reported by 58(20.13%) males.

35(12.15%) males were consuming smokeless tobacco in one or other form such as chewing tobacco, betel nut, quid etc. and out of which 33(94.29%) were using smokeless tobacco daily. (Table 2)

Alcohol consumption was reported by 17 (5.90%) male faculty members. Among them, 16 (94.11%) males consumed alcohol occasionally.

All the 288 female faculty members were life time abstainer for tobacco and alcohol consumption.

Figure 1: Age distribution of tobacco and alcohol consumer - (Male)

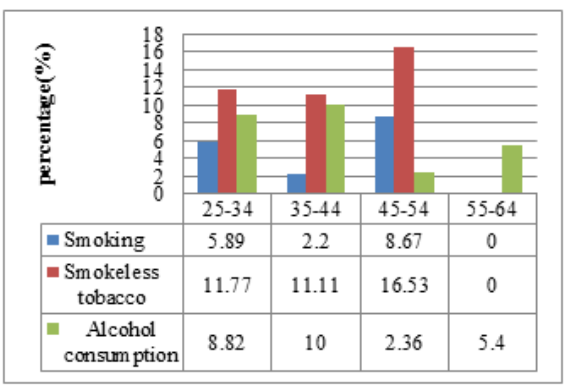

Figure 1 shows, prevalence of smoking varied from 2.22% to 8.67% in the 25-54 years of groups. Prevalence of smokeless tobacco varied from 11.11% to 16.53% in the 25-54 years of age group. Alcohol consumption was higher in 35-44 years of age group (10.00%).

Table 3: Details of exercise

Details	Exercise*	
	Male No. (%)	Female No. (%)
Yes	229(79.51)	218(75.60)
No	59(20.48)	70(24.30)
Frequency of exercise (more than 30mins a day)**		
1 to 2 days in a week	3(1.31)	17(7.79)
3 to 4 days in a week	25(10.91)	51(23.39)
> 5 days in a week	201(87.77)	150(68.80)
Total	229(100)	218(100)

* X^2= 1.20, d f= 1, p > 0.05

** X^2= 25.85, d f= 2, p < 0.05

229 (79.51%) males and 218 (75.60%) female faculty members engaged themselves in different kinds of exercise like walking, cycling, running, swimming, meditation or pranayam etc. Out of 229 male faculty members engaged in exercise, majority 201(87.77%) do so for more than 5 days in a week and out of 218 females, majority 150 (68.80%) also do so for more than 5 days in a week and this difference was found to be statistically significant. (Table 3)

Table 4: Job satisfaction and job stress among study participants

Variable		Male (n=288)	Female (n=288)
Job satisfaction*	Yes	266 (92.36%)	264 (91.66%)
	No	22 (7.64%)	24 (8.34%)
Job stress**	Yes	24 (8.34%)	48 (16.66%)
	No	264 (91.66%)	240 (83.33%)

* X^2= 0.09, d f= 1, p > 0.05

** X^2= 9.14, d f= 2, p < 0.05

(**= significant at 95% confidence interval)

Prevalence of job stress was higher in females (16.66%) as compared to males (8.34%) and the difference was statistically significant. (Table 4)

Figure 2: Prevalence and Distribution as per Body mass index

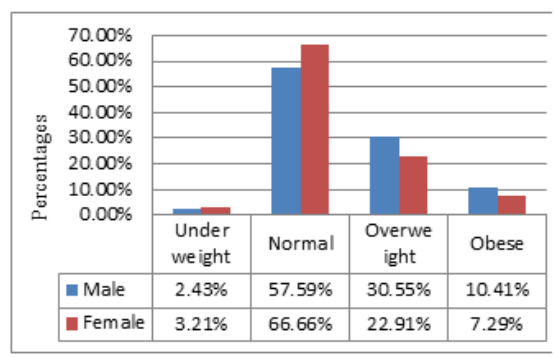

Figure 2 revealed that more numbers of male faculty members were overweight & obese (30.55% & 10.41% respectively) as compared to female faculty members (22.91% & 7.29% respectively.

Table 5: Details of Self reported Hypertension

Sr. no.	Variables	Sex			
		Male (n=288)		Female (n=288)	
1.	When was your blood pressure last measured	No.	%	No.	%
	Last one year	160	55.55	165	57.29
	One to five Years	52	18.05	54	18.75
	More than Five years	15	5.20	6	2.08
	Never	61	21.18	63	21.87
	Total	288	100	288	100
2.	Self reported cases of hypertension	34/288	11.79	45/288	15.62

Blood pressure of 165 (57.29%) female faculty members and 160 (55.55%) male faculty members was measured in last one year. Gender difference has been observed in the prevalence rate of **self reported hypertension** cases which was more in females (15.62%) compared to males (11.79%) but this difference was statistically not significant (X^2= 1.77, d f= 1, p > 0.05). (Table 5)

Table 6 revealed that during study total prevalence of hypertension (Self reported and hidden cases) was found to be 23.26% among male faculty members and 26.38% among female faculty members. Among the hypertensive, 34(11.79%) males and

45(15.62%) females had self reported hypertension and rest of them 33(11.45%) males and 31(10.76%) females were detected with high blood pressure during the study.

Table 6: Hidden cases and prevalence of Hypertension

Blood pressure	Total detected Hypertension cases	Known cases	Detected while survey	% detected during survey
Male (n=288)	67	34	33	11.45
Female (n=288)	76	45	31	10.76
Total prevalence detected during survey				
Sex	Total cases of Hypertension	Prevalence rate (%)		
Male (n=288)	67	23.26		
Female (n=288)	76	26.38		
Family history of Hypertension				
F/h	Male	Female		
Yes	16 (23.88%)	20 (26.31%)		
No	51 (76.12%)	56 (73.69%)		
Total	67 (100%)	76 (100%)		

Discussion:

A total of 576 faculty members were included as study participants. Teacher's age ranged from 25–64 years with mean age of female was 42.76 years and that of male was 45.47 years. (Table 1) Almost similar socio-demographic profile was observed in a study done by Nahla K.R. Ibrahim. [3]

The prevalence of smoking among men was 5.21% (Table 2) which is lower to study done in Kerala (42%) while higher to study done in Botswana (3.2%).(76,81) The prevalence of smokeless tobacco consumption among men was 12.15% which is lower to study done in urban setting of Gandhinagar district (23.1%).[4] Lower prevalence of tobacco consumption in our study was due to most of the teachers were very well aware about the health hazards of tobacco use but still this prevalence was matter of concern to public health system. Women were lifetime abstainer for any kind of tobacco consumption while another study done by Sh Khosropanah et al found prevalence of smoking among females 1.08 %.[5]

Prevalence of alcohol consumption was in 5.90% (17/ 288) among male faculty members (Figure 1) which is lower than the prevalence of alcohol consumption found in a study done by K.R. Thankappan (26.5%). [6] Gujarat being a dry state, details about alcohol consumption were not revealed by the study participants. A possibility of underreporting cannot be ruled out. None of women reported consuming alcohol and same finding was also found by SD Bhardwaj et al in their study. [7]

The physical inactivity was higher among female faculty members (53.13%) as compared to male faculty members (34.37%). Study done by Gandhari Basu et al in West Bengal found that 38.6% of females and 38.4% of males were physically inactive. [8] (Table 3). The lower physical activity among female was mainly due to not getting enough time because of dual responsibility of job and household work.

In present study, the prevalence of overweight (male=30.55%, female=22.91%) and obesity (male=10.41, female=7.29%) was lower (Figure 2) than that was found in the study done by Balkees Abed Bakhotmah on teachers of Western Saudi Arabia. [9]

In current study, the observed prevalence of hypertension was higher in females (26.38%) as compared to males (23.26%). (Table 6) This finding is contradicted with the finding given by Sh Khosropanah et al in which males (21.30%) were more hypertensive than females (16.20%). [5]

Conclusion:

In conclusion, the remarkable prevalence of risk factors of hypertension both in male and female faculty members calls for a sound public-health approach for the prevention of non-communicable diseases among teaching faculty members.

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